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ABSTRACT

Working with the entire junior class of a suburban, middle-class high school, researchers investigated the effects of family stability on student performance, using the Iowa Test of Educational Development as an achievement measure. A statistical test was applied to two groups of students, representing stability or lack of stability in the family environment. Results indicated that students from a stable family environment score significantly higher. Additional statistical applications indicate that the results are not as clearly defined when the students' previous junior high school, which is regarded as providing additional social and educational variables, is known. (Author/LH)

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ACHIEVEMENT AS A FUNCTION OF FAMILY STABILITY

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ABSTRACT

Working with the entire junior class of a suburban high school, the effects of family stability on student performance on an achievement measure (Iowa Test of Educational Development) was assessed. A statistical test was applied to two groups representing stability or lack of stability in the family environment. Results indicate that students from a stable family environment score significantly higher on the measure of achievement. Additional statistical applications indicate that the results are not as clearly defined when the students' previous junior high is known.

ACHIEVEMENT AS A FUNCTION OF FAMILY ENVIRONMENT

Seldom does a day pass when newspapers or television fail to highlight the problems of family life in today's world. Serious concern about the American family's ability to perservere in such trying times has been raised and widely publicized (Mendelsohn, 1976). No longer is the American family a closely knit, extended unit, representing several persons of various generations who combine much experience. Even today, the nuclear family, which typically consists of parents and children, is jeopardized by rising rates of divorce, desertion, and illegitimacy (US News and World Reports,1976; Keniston, 1975). An additional assault upon the extended family comes from America's youth and is manifested in alarming increases in runaways and suicide. As a result of this, raising children is a major challenge in today's society. The challenge that parents have is match only by the task that is leveled upon educational institutions--to provide learning experiences which will transform today's youth into thoughtful, resourceful, and contributing members of society.

Educators have attempted to meet this challenge in a number of ways. Working with parents and the family unit has been an emphasis in many guidance programs (Satir, 1972), while others have used counselors to teach parenting skills (Dinkmeyer and Mc Kay, 1973; Gordon, 1974). Educators-teachers, administrators, and counselors-have received instruction in the valuing process (Simon, 1971), in consulting skills (Dinkmeyer and Carlson, 1973), and in reducing failure (Glasser, 1969). Still other guidance activities have been directed at identifying perceptions of

educational values and school climate (Schutz, 1962) in an effort to assess and adapt the educational environment to the needs of the community. At the same time, attention has been directed toward developing instruments which will identify students with existing or potential family conflict (Bienvienu, 1969; Cottle, 1966; Moos, 1974). The use of these later activities assist the counselor in facilitating learning through the identification and remediation of unproductive students.

Collectively, these factors led to further consideration of the differences in performance which may exist between students. More specifically, the question raised was whether scores on the Iowa Test of Educational Development would differ markedly between those students who perceive their family environment as happy and harmonious, without major crises, and those who do not. The concern was that students who fail to view their family as one in which they had rights and responsibilities, as well as feelings of friendship and trust, would not achieve as well in school. This research reports the results of an attempt by a school guidance department to identify and determine the extent performance on an achievement instrument varies between students' perception of their family environment.

METHOD

Subjects

The accessible population was the entire junior class of a suburban school for the years 75-76 and 76-77. Located in a Midwestern city of approximately 300,000, the school had a population (grades 10-12) of approximately 2,400 and was the largest in the state during the period of the study. The school district itself was small (approximately 10,000 students) and the socioeconomic background was largely middle class.

Because the achievement battery was given at the direction of the school board, all juniors were administered the instrument. As a result of the large sample size (N=744, 1975-76; N=684, 1976-77) within the study, it was not necessary to control for factors such as sex, age, or intelligence. It is assumed that these factors were operating in a random manner and would therefore fail to systematically influence the results.

Measures

The dependent variable was student performance on the Iowa Test of Educational Development. This instrument was selected because of its' widespread use throughout the state as well as its' inclusion in the State Assessment Program. The ITED is a general achievement battery designed to measure understanding and application rather than a knowledge of specific facts. Four broad curricular areas of social studies, English, mathematics, and science are measured by eight separate subtests: reading comprehension, reading vocabulary, language art-usage, language arts-spelling, mathematics, social studies, science, and use of sources. The results are reported for each of these subtests as well as three combination scores: reading total, language arts total, and composite (reading, language arts, and mathematics).

The independent variable was student perception of the family environment. A self report item by nature, students were asked whether they agreed that the following statement described their family:

> A stable family is one in which there exists a consistently happy and harmonious family environment

without major crises. You know that as a member of the family you have rights and responsibilities which are important to the family structure that exists. Of considerable importance is the feeling that you are living with friends, people that you like and trust and who in turn like and trust you.

Positive or negative responses to this item were collected as part of the preliminary coding of the answer sheet, prior to the actual administration of the examination. This coding procedure resulted in student self selection into one of two groups: those who agreed with the statement--Stable Family Environment; and those who did not--Unstable Family Environment (See Table 1). A mean on the dependent measure (ITED) for these two groups was established on each of the eleven reported scores (including the three combination scores reported) for each year of the study (See Table 2).

Each student was then asked to indicate the junior high school within the district that had been attended. (Students who had not attended junior high in the district were asked to mark the "New to District" category.) Following from the above, a mean on the dependent measure for the two groups--Stable and Unstable Family Environment--was established on each of the eleven reported scores for each district junior high and "New to District" groups (See Table 3).

Procedures

The data for this research was first collected for the 75-76 Junior Class and subsequently for the 76-77 Junior Class. In each instance, two half day morning dismissals were provided in the Fall to administer the self report item of Stability of the Family Environment

and the ITED. During the initial half day session while students were recording other necessary information (name, previous junior high, home room) on the answer sheet, the Stable Family Environment statement was administered. Following the initial instructions, several of the subtests of the ITED were administered. At the conclusion of the first testing period, test booklets and answer sheets were collected. At the beginning of the second of the two half day dismissals, booklets and answer sheets were returned to each student and the remaining subtests were administered.

Upon conclusion of the testing period for each of the two years, the answer sheets were returned to the test publishers, Science Research Associates, for scoring and profiling. When these materials were returned to the author the necessary analysis was completed.

Analysis

The question this research attempted to answer was: Do students who respond positively to the Stability of the Family Environment statement achieve significantly higher scores on the ITED than those who respond negatively. Because the data consisted of mean standardized scores for two groups-Stable and Unstable Family Environment, a t-test for independent samples was appropriate (Glass and Stanley, 1970). The data required the experimenter to perform 11 separate t-tests on the reported scores for each of two years, representing 22 separate tests. Further analysis permitted the experimenter to compare performance differences between Stable and Unstable groups for each of the junior highs previously attended (including the "New to District" group). With 4 junior high classifications and two years in the study, a total of 88 t-tests were performed.

The review of the literature concerning family environment as well as an intuitive belief that students who perceive their family environment as stable will achieve higher than those who do not, dictated the use of a one tailed hypothesis. As a result, each of the above t-tests were performed with a one tailed rejection region at the .05 level of confidence.

Results

The first set of t-tests was performed on the data collected from all students in each of the two years of the study. Table 1 reveals that there is a highly significant difference (.01 level) between students who perceive the family environment as stable and those who do not on 20 of the 22 indicators of achievement. The remaining two t-tests revealed a significant difference for Reading-vocabulary (75-76) and no significance for Language Arts-spelling (76-77). Hence, in each year the stable family group scored significantly higher than the unstable group in 21 of 22 areas of achievement on the ITED[1].

-----Insert Tables 1 & 2-----

The t-test procedure was also applied to the data collected by junior high. When examining the performance of the Stable and Unstable groups for each of the four junior highs there are 44 opportunities each year to establish a significant difference. In the year 75-76, a significant difference between the Stable Family group on the ITED occurred 19 times when compared with the Unstable Group. An additional seven of the subtests represented a highly significant difference between the two groups. As a result, in 75-76 a significant difference in ITED performance was established in 26 of 44 cases (Table 3).

Similar conclusion can be drawn from the junior high data for

the year 76-77. In this year, table 3 indicates 16 instances in which there was a significant difference and 9 cases in which there was a highly significant difference. For the year 76-77, positive respondents to the Stability of the Family Environment statement achieved at a significant or highly significant rate on the ITED in 25 or 44 areas when compared to negative respondents.

-----Insert table 3-----

Discussion and Implication

It is apparent from table 2 that students who describe their family environment as healthy and harmonious perform at a higher level on a measure of achievement than do other students who disagree with the description. This higher level of achievement is consistent (with the one exception of the 76-77 Language Arts-spelling subtest score) between the two years of the study in which positive and negative respondents to the Stability of the Family Environment statement were compared.

When respondents are ordered by previous junior high attended, as well as the perceived stability within the family, the results are not nearly so straightforward. Table 3 indicates the areas of significant difference within each junior high. Examination of this data indicates that achievement appears to be less of a function of the Stability of the Family Environment for some schools in several of the subtests. Before widespread generalizations may be formed it would be appropriate to compare the junior highs on several additional factors--ability level, socioeconomic status of the family, number of single parent families, etc. At this point, only very tentative conclusions can be drawn based upon previous knowledge of the junior highs and these results. One hypothesis for further investigation might be that School B achieves significantly

higher, has more intact families, a higher socioeconomic status, and greater ability level than any of the other junior highs.

With these results in mind, school administrators, counselors and teachers may want to consider using the Stability of the Family Environment statement as a self selection index. This statement may then be administered in a brief period of time to students in a class, homeroom, new student orientation group, or even during individual counseling with a student. After assessment of the number of negative respondents is completed, the counseling and guidance staff can be instrumental in planning special help programs--family education classes, parenting skills sessions, human relations training, divorce counseling groups, or academic support programs--designed and implemented for these students and their families. In most instances, the involvement of the negative respondent's family will enhance the commitment to change academic performance as well as to deal with the crisis situations that exist in the home.

If a broader perspective of student achievement as a function of the family environment is desired, the statement may be administered to high school students who also identify their previous junior high. A close examination of these results may reveal that certain district attendance areas, when compared to others, encompass discrepancies in performance (e.g. table 3). As a result of this information, budget considerations, staffing assignments, and program development may be possible alternative available to enhance student performance. It is necessary to enumerate that, before any of these steps may be taken, students must be identified whose families suffer from instability. The Stability of the Family Environment statement appears to be a good

discriminator of this when used in conjunction with an achievement measure to assess the interrelationship of the two.

Note 1. Further analysis performed, but not reported here, indicates that there is no significant difference between the performance of positive respondents to the Stability of the Family Environment statement when compared between the two years of the study. This same conclusion holds for those negative respondents. This further helps to establish that the performance of the two groups appeared to be typical rather than extraordinary.

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TABLE 1: Percent of juniors in stable and unstable categories. Number in parenthesis represents total in each sample.

YEAR	Stable	Unstable	Stable	Unstable	Stable	Unstable	Stable	Unstable	Stable	Unstable
75-76	71	29	77	23	69	31	78	21	73	27
	(290)		(219)		(157)		(69)		(735)	
76-77	81	19	80	20	82	18	72	28	80	20
	(272)		(192)		(152)		(60)		(676)	
	A		B		C		NEW TO DISTRICT		TOTAL	
SCHOOL										

TABLE 2: Mean standard scores for positive (stable) and negative (unstable) respondents to the Stability of the Family Environment Statement across the junior class.

		75-76			76-77		
SUBTEST		STABLE	UNSTABLE	t VALUE	STABLE	UNSTABLE	t VALUE
Composite		20.13	17.89	4.40 **	19.92	17.75	4.00 **
READING	Compre	18.83	16.99	3.86 **	19.34	16.96	3.02 **
	Vocab	19.80	18.82	2.20 *	20.03	18.03	4.23 **
	Total	19.06	17.43	3.58 **	19.37	17.12	4.67 **
LANG ARTS	Usage	18.29	16.58	4.15 **	18.58	16.93	3.60 **
	Spell	17.00	15.67	2.81 **	15.76	15.02	1.37
	Total	17.92	16.35	3.70 **	17.49	16.27	2.69 **
Mathematics		18.47	16.32	4.03 **	18.27	16.11	3.85 **
Social Stud		17.37	15.90	3.18 **	17.77	16.13	3.49 **
Science		18.72	16.69	4.54 **	18.58	17.07	3.22 **
Use of Sources		17.80	16.14	3.50 **	18.44	15.82	5.15 **

One tailed test of significance

$.05t_{\infty} = 1.645$

$.01t_{\infty} = 2.326$

TABLE 3: Mean standard scores for positive (stable) and negative (unstable) respondents to the Stability of the Family Environment statement by junior high previously attended.

		School A			School B			School C			"New to District"		
SUBTEST	YEAR	Stable	Unstable	t Value	Stable	Unstable	t Value	Stable	Unstable	t Value	Stable	Unstable	t Value
Composite	75-76	19.6	17.7	2.43**	21.5	20.0	1.51	18.4	16.3	2.29*	20.4	16.9	1.77*
	76-77	20.0	17.8	2.73**	21.5	19.5	1.93*	17.8	15.7	1.80*	20.0	16.8	1.82*
READING Compre	75-76	18.3	16.6	2.25*	20.1	18.9	1.37	18.0	15.8	2.36**	18.6	16.5	1.19
	76-77	19.5	16.9	3.38**	20.3	18.4	2.02*	17.9	15.1	2.53**	19.3	16.8	1.60
READING Vocab	75-76	19.5	18.4	1.52	20.8	20.2	0.76	18.6	17.7	0.98	21.0	20.1	0.59
	76-77	20.0	18.0	2.72**	21.1	20.1	1.16	19.0	15.7	3.18**	19.3	17.1	1.32
READING Total	75-76	18.5	17.1	1.94*	20.3	19.1	1.44	18.0	16.1	2.11**	19.5	17.9	0.95
	76-77	19.4	17.1	3.13**	20.5	18.8	1.90*	18.0	15.0	2.80**	19.1	16.7	1.51
LANG ARTS Usage	75-76	18.1	16.4	2.70**	19.2	18.7	0.64	17.3	15.1	2.65**	18.2	15.1	2.09*
	76-77	18.5	17.1	2.06*	19.6	18.0	1.85*	17.4	15.4	1.86*	18.6	16.4	1.42
LANG ARTS Spell	75-76	16.9	15.7	1.67*	18.3	17.6	0.80	15.1	14.4	0.73	17.2	13.0	2.42**
	76-77	15.7	14.9	0.94	17.1	17.1	0.00	14.3	12.8	1.25	15.5	14.3	0.84
LANG ARTS Total	75-76	17.8	16.2	2.49*	19.0	18.5	0.62	16.5	15.0	1.77*	17.9	14.2	2.45**
	76-77	17.4	16.3	1.58	18.8	17.8	1.22	16.1	14.5	1.52	17.3	15.6	1.28
Mathematics	75-76	18.1	16.4	2.02*	19.7	17.6	2.02*	16.9	15.0	1.97*	19.2	15.7	1.76*
	76-77	18.6	16.6	2.36**	19.5	17.0	2.28*	16.0	14.6	1.18	18.6	15.0	2.11*
Social Stud	75-76	17.4	15.8	2.17*	18.3	17.0	1.49	15.8	14.6	1.34	17.5	16.9	0.38
	76-77	17.8	16.3	2.05*	18.7	17.6	1.25	16.5	14.5	1.99*	17.9	14.7	2.20*
Science	75-76	18.6	17.0	2.21*	19.3	18.3	1.26	17.8	15.8	2.30*	19.2	16.2	1.75*
	76-77	18.9	17.4	2.03*	19.2	18.2	1.17	17.1	15.4	1.63	19.0	16.1	1.97*
Use of Sources	75-76	17.4	15.7	2.26*	18.5	17.0	1.75*	17.1	15.1	1.98*	18.2	16.8	0.99
	76-77	18.4	15.4	3.70**	19.4	16.5	3.17**	17.3	15.5	1.54	18.5	16.1	1.51

One tailed test of significance

$.05t_{\infty} = 1.645$ $.05t_{69} = 1.699$ (New to district group)

$.01t_{\infty} = 2.326$ $.01t_{69} = 2.353$ (New to district group)